

EIGHT NEW SPECIES OF INDO-PACIFIC
CRABS FROM THE COLLECTIONS OF THE
SMITHSONIAN INSTITUTION

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Abstract.—Four of the species described below were collected during the explorations of the U.S. Fish Commission vessel *Albatross* in 1908 and 1909. The remainder are from various sources and were found in the unidentified collections of the National Museum of Natural History. The new taxa include representatives of eight genera belonging to four families, including the Dorippidae, Leucosiidae, Cancridae, and Palicidae.

Most of the brachyuran crustaceans collected by the *Albatross* and deposited in the Smithsonian Institution were studied by Mary Jane Rathbun, and the remaining oxyrhynchous crabs have been studied by Dr. D. J. G. Griffin of the Australian Museum. I reexamined the *Albatross* collections and give herein descriptions of new species of crabs belonging to the families Dorippidae, Leucosiidae, Cancridae, and Palicidae. In addition, 4 new species of the family Leucosiidae are described; these were obtained from the Indo-Pacific by other collectors on various expeditions. All of these specimens have been deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C.

Family Dorippidae MacLeay, 1838
Ethusa Roux, 1830

The genus *Ethusa* comprises about 14 species in the Indo-Pacific, the new species is therefore the fifteenth of this genus. In the Philippines, only one species of Dorippidae, *Ethusina gracilipes* Miers (1886), is known. Miers (1886) also reported *Ethusina sinuatifrons* from Japanese seas at a depth of 1875 fathoms, but this name is a *nomen nudum*.

Ethusa philippinensis, new species
Fig. 1a, b

Material.—1 ♂, holotype (USNM 195051), 4.5 miles NE of Legaspi Light, Lagonoy Gulf, Philippine Islands, 13°12'N, 123°49'18"E, 72 m, (146 fms), *Albatross* sta 5453, 7 Jun 1909.

Description.—The holotype is imperfect and soft-shelled. It is closely related to *E. hawaiiensis* Rathbun (1906; originally *E. mascarone hawaiiensis* Rathbun), the type of which is preserved in the Smithsonian Institution, and which was reexamined by the author in 1960. Front of new species produced anteriorly, composed of 4 teeth, median incision deepest. Outer orbital tooth triangular, situated apparently posterior to front, with its tip directed anteriorly, not laterally. Eyes very small. Anterolateral borders moderately swollen posteriorly; in *E. hawaiiensis*, they are subparallel and only slightly swollen.

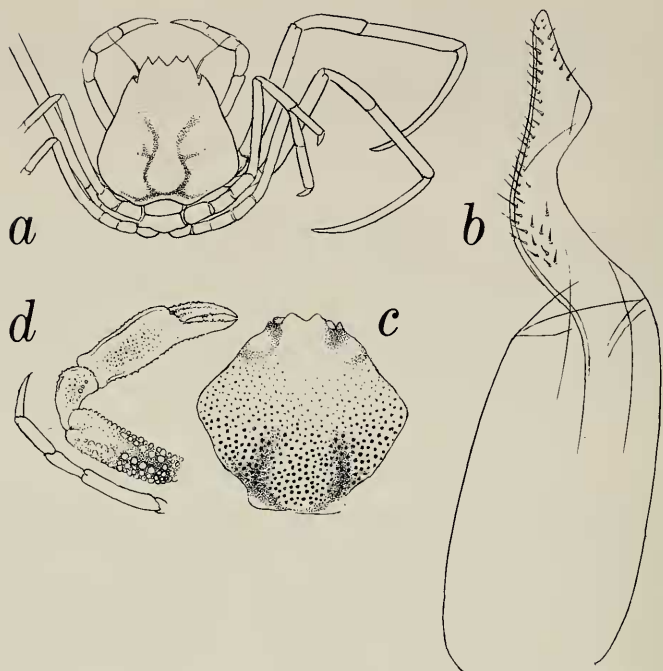


Fig. 1. *Ethusa philippinensis*, new species, male holotype, cl 11.3 mm: a, Dorsal view; b, Anterior male pleopod. *Ebalia punctulata*, new species, female holotype, cl 6.8 mm: c, Carapace; d, Cheliped and thoracic leg.

Dorsal surface of carapace smooth, "demon-faced" sculpture characteristic of Dorippidae faint, but groove around imaginary nose rather distinct.

Chelipeds slender and symmetrical. Dactyli of ambulatory legs very long, much longer than propodi. Anterior pleopod figured in Fig. 1b.

Measurements.—Length of carapace in the median line 11.3 mm, width 9.5 mm.

Leucosiidae Samouelle, 1819

Ebalia Leach, 1817

Ebalia punctulata, new species

Fig. 1c, d

Material.—1 ♀, holotype (USNM 195059), collected at Rongelap Lagoon, west of Rongelap Id., 10 m (20 fms), 21 Jun 1946, coll. Taylor.

Description.—Small species, carapace somewhat rhomboidal. Front moderately produced anteriorly, divided into 2 lobes by shallow median incision; anterior margins of these lobes straight. Lateral borders markedly convex. Posterolateral margins also slightly convex; posterior border transversely straight, lateral angles produced into plate-like crest.

Dorsal surface of carapace punctulate, but anterior third smooth. Surface inside hepatic region and on either side of intestinal region moderately depressed. Body lacking tubercles and spines.

Chelipeds equal, arm tuberculate along anterior and posterior borders, tubercles arranged in 2 or 3 longitudinal rows; wrist and palm punctulate. Movable and immovable fingers straight, prehensile margins finely denticulate.

Relationships.—This species is distinctive in having the dorsal surface of the carapace minutely punctulate, and in lacking granules and spines on the body.

Measurements.—Length of carapace 6.8 mm, width 7.1 mm.

Cryptocnemus Stimpson, 1858

Cryptocnemus marginatus, new species

Fig. 2a–c

Material.—1 ♂, holotype (USNM 195060), Benkoelen, Sumatra, coll. H. C. Kellers, U.S. Navy Eclipse Expedition to Sumatra, Nov 1925.

Description.—The genus *Cryptocnemus* is restricted to the Indo-Pacific, containing about 16 species until now; the new species is therefore the seventeenth. The holotype is soft and post-ecdysal. Most thoracic legs are missing and the right posterior corner of the carapace is broken and lost.

Carapace transversely ovoid, dorsal surface flat and smooth, margin elegantly bordered with tubercles, regularly and very closely arranged. Front only slightly produced beyond outline of carapace, median notch very shallow. Ventral preorbital edge also elegantly bordered with tubercles, its inner anterior notch deep, median portion distinctly notched. Outer maxilliped tightly closing the mouth, exognath longer and broader than endognath.

Chelipeds slender, arm, wrist, and palm very swollen, but anterior and posterior borders not carinate. Ambulatory legs very slender.

Male abdomen, and first and second pleopods lost; their characteristics not known.

Measurements.—Length of carapace 6.8 mm, width 7.2 mm.

Relationships.—This new species is closely related to *Cryptocnemus aberrans* Balss (1938) from Talagi, British Solomon Islands, but in the latter species the margin of the carapace is not bordered with tubercles and is strongly upturned.

Praebebalia Rathbun, 1911

Praebebalia septemspinosa, new species

Fig. 2d–h

Material.—2 ♂, holotype (USNM 195061) and paratype (USNM 195063), and 1 ♀ allotype (USNM 195063), NE of island lighthouse, Capitancillo Island, Visayan Islands, Philippine Islands, 11°10'N, 124°17'15"E, 90 m, (182 fms), *Albatross* sta 5403, 16 Mar 1909.

Description.—The genus *Praebebalia* also is restricted to the Indo-Pacific, containing 4 species until now; the new species is therefore the fifth. Carapace wide and subcircular, margin armed with 7 teeth, 1 pair on either side of lateral margin, 1 pair at midlength of each posterolateral margin, 1 pair on either side of posterior margin, and finally 1 on posterior slope of intestinal region. One or 2 small teeth on anterior margin of lateral tooth, and 1 small tooth on hepatic margin.

Dorsal surface of carapace covered with tubercles of various sizes, those on anterior and lateral surfaces large, those on posterolateral and posterior surfaces

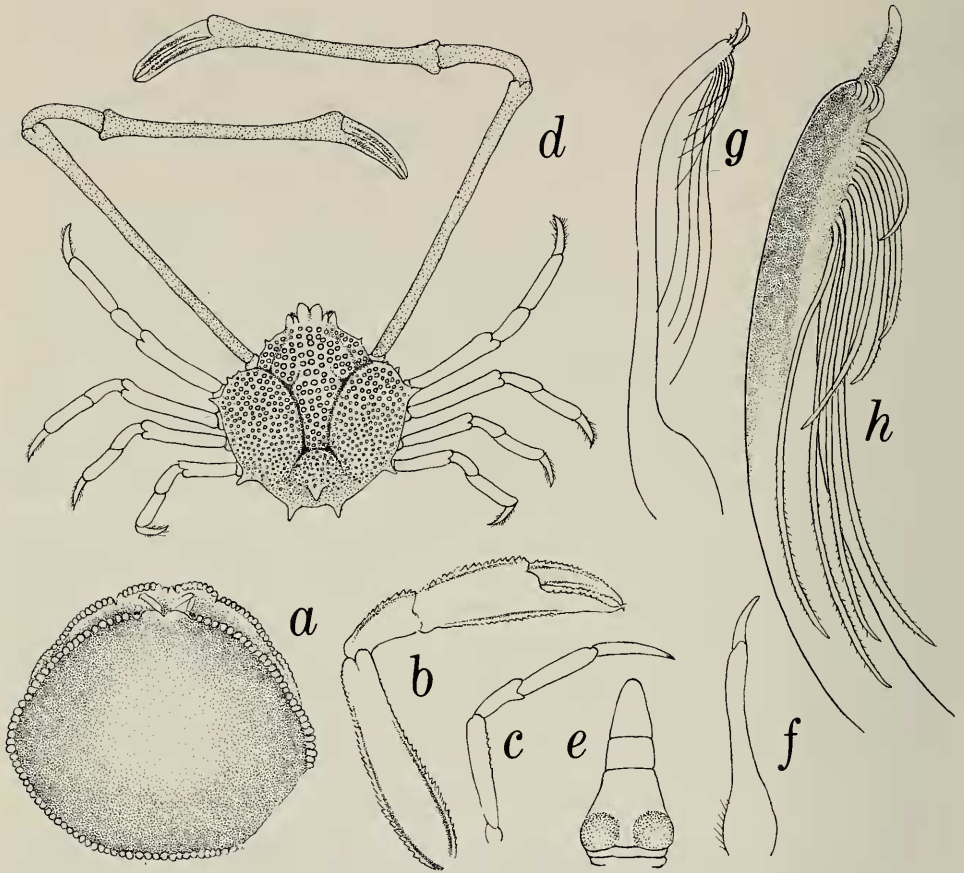


Fig. 2. *Cryptocnemus marginatus*, new species, male holotype, cl 6.8 mm: a, Carapace; b, Cheliped; c, First ambulatory leg. *Praebebalia septemspinosa*, new species, male holotype, cl 13.8 mm: d, Dorsal view; e, Abdomen; f, Second male pleopod; g, h, Anterior male pleopod.

small and indistinct to naked eye. Front produced, composed of 2 teeth, divided by median notch, intercalated spine small, external orbital spine larger.

Chelipeds very long, total length 4.5 times as long as carapace. Arm, wrist, and palm finely granulated; fingers inclined about 15 degrees to palm, their prehensile edges finely denticulate. Ambulatory legs slender, with no tubercles or granules.

Male abdomen composed of 5 segments, third to fifth fused, final segment very long. Anterior male pleopod slender, distal part furnished with 3 short, 4 median, and 4 very long hairs; apical process thin and projected laterally. Second pleopod simple (Fig. 2f).

Measurements.—Length of carapace 13.8 mm, width 14.5 mm, length of cheliped 62.0 mm.

Relationships.—The new species is related to *P. extensiva* Rathbun (1911), the type-species of this genus, but in the latter species, the carapace has only 5 marginal spines, and the dorsal surface is smooth, not granulated.

Pseudophilyra Miers, 1879
Pseudophilyra burmensis, new species
Fig. 3a, b

Material.—1 ♂, holotype (USNM 195049), Rangoon, Burma, coll. G. E. Gates, 1928.

Description.—The genus *Pseudophilyra* also occurs only in the Indo-Pacific, containing 12 species until now; the new species is therefore the thirteenth.

Carapace almost circular and moderately flattened. Dorsal surface granulate, but anterior part of gastric region, postorbital surface, interior of anterolateral and central part of intestinal region nongranular and smooth. Front bilobed, each lobe rounded and divided by median shallow notch, underlying which, small ventral frontal tooth. Intercalated spine small, outer orbital tooth strong and obtuse. Eyes very small. Prebuccal plate small and polished.

Chelipeds strong, arm covered with longitudinally arranged tubercles, distal part of arm smooth; wrist and palm smooth except upper and lower margins, both slightly granulated. Chelae as long as palm, prehensile edges finely denticulate. Ambulatory legs all slender.

Male abdomen composed of 5 narrow segments, third to fifth coalesced, seventh very long and distally narrowed. Anterior male pleopod cylindrical with tip cut off obliquely into oval surface, with one margin densely haired, and very long hair at base.

Measurements.—Length of carapace in median line 10 mm, width 10 mm.

Relationships.—In the arrangement of granules on the upper surface of the carapace, the new species is related to *Philyra adamsii* Bell (1855) but the latter species has the front narrower and no median ventral spinule in the median frontal sinus, in contrast to the new species. The anterior male pleopod of *P. burmensis* is distinctive (Fig. 3b).

Leucosia Weber, 1795
Leucosia bikiniensis, new species
Fig. 3c–e

Material.—1 ♂, holotype (USNM 195050), Sta 3605, 0.5 mi S of west end, Bikini Atoll, Marshall Islands, 5 m, (10 fms), 26 Aug 1947, coll. J. P. E. Morrison.

Description.—Carapace very broad, breadth exceeding length. Front produced slightly anteriorly, divided into 2 lobes by median shallow sinus. Hepatic border produced into low triangular lobe. Lateral border densely furnished with hairs; narrow crest present along posterolateral and posterior borders. Dorsal surface smooth, coloration faded; ocelli or stripes usually found in *Leucosia* not observed.

Chelipeds rather short and robust. Left cheliped, arm bearing 2 very large tubercles followed by 1 basal and 1 smaller distal tubercle on anterodorsal border; cluster of about 4 small tubercles at upper basal surface; about 6 medium-sized tubercles on posterior border; and finally, 5 smaller tubercles in cluster at posterior basal surface, covered with velvety tomentum.

Right cheliped, arm bearing 3 large tubercles on dorsoanterior border; otherwise arrangement of smaller tubercles about same as those of left cheliped.

Wrist, palm, and fingers carinate along inner and outer borders. Outer distal

part of wrist bearing row of several small tubercles traversed by row of few tubercles; basal end of immovable finger armed with 2 oblique rows of small tubercles.

Male abdomen like that of related species, composed of 4 pieces, second, and third broad, third segment armed with spinule in middle. Anterior male pleopod thin, distal end thickened and divided into 2 hemispheres, covered with hairs. Inner hemispheres armed with low spine, outer hemisphere slightly higher, without spine.

Measurements.—Length of carapace 7.0 mm, width 7.3 mm.

Relationships.—This species is closely related to *Leucosia insularis* Takeda and Kurata (1976), from the Bonin Islands (=Ogasawara Islands), but in the latter species the thoracic sinus is marked with one large and several smaller tubercles instead of 2 ridges of small tubercles and a few larger tubercles between the 2 ridges in *L. bikiniensis*. In the Bonin species, the apex of the male pleopod is globular, while in the new species it is divided into two hemispheres.

Canceridae Latreille, 1803

Cancer Linnaeus, 1758

Cancer is the oldest and fundamental genus of the decapod crustaceans, established by Linnaeus in 1758. In the Indo-Pacific, this genus comprises 8 species until now:

- Cancer gibbosulus* (De Haan, 1835)
- = *Trichocarcinus affinis* Miers, 1879
- Cancer novaezelandae* (Jacquinot, 1853)
- Cancer japonicus* Ortmann, 1893
- Cancer amphioetus* Rathbun, 1898
- = *Trichocarcinus dentatus* Miers, 1879 (preoccupied)
- Not *Cancer dentatus* Herbst, 1785
- Not *Cancer dentatus* Bell, 1835
- = *Cancer bullatus* Balss, 1922
- Cancer tumifrons* Yokoya, 1933
- Cancer nadaensis* Sakai, 1969
- Cancer sakaii* Takeda & Miyaki, 1972
- = *Platepistoma anaglyptum* Balss, 1922 (preoccupied)
- Cancer guezei* Crosnier, 1976

Cancer luzonensis, new species

Fig. 3f

Material.—1 ♀, holotype (USNM 195064), off Matocot Point, Luzon Island, Philippine Islands, 13°41'50"N, 120°58'30"E, 86 m, (172 fms), *Albatross* sta 5289, 22 Jul 1907.

Description.—This species has 3 frontal teeth, median very small and in a lower ventral position. Orbital teeth strong. Anterolateral margin divided into 9 teeth, subequal in size and shape and arranged in arch, last tooth situated at outermost corner. Posterolateral border slightly concave, armed with about 8 teeth behind last anterolateral tooth. Posterior margin also slightly concave, smooth, without teeth.

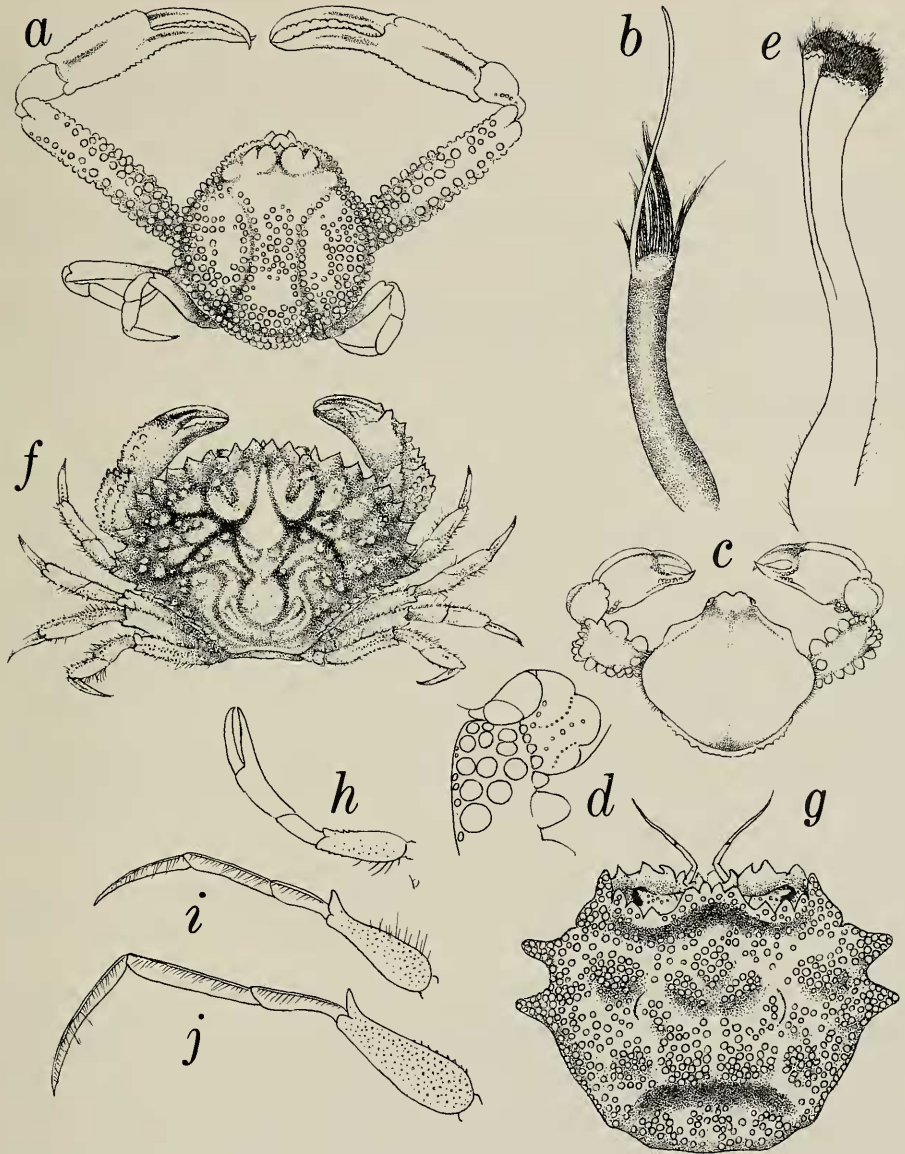


Fig. 3. *Pseudophilyra burmaensis*, new species, male holotype, cl 10 mm: a, Dorsal view; b, Anterior male pleopod. *Leucosia bikiniensis*, new species, male holotype, cl 7.0 mm: c, Carapace and chelipeds; d, Thoracic sinus; e, Anterior male pleopod. *Cancer luzonensis*, new species, female holotype, cl 34.0 mm: f, Dorsal view. *Palicus bidentatus*, new species, female holotype, cl 7.1 mm: g, Carapace; h, Cheliped; i, Second ambulatory leg; j, Third ambulatory leg.

Dorsal surface of carapace deeply areolate, grooves separating gastric, cardiac, and branchial regions deep and distinct. These regions divided into subregions; anterior surface of gastric region and lateral surfaces of hepatic and branchial regions sparingly tuberculate. Cardiac and intestinal regions also indistinctly tuberculate. Chelipeds subequal in size and shape; arm short and almost hidden

beneath anterolateral margin, upper surface smooth. Upper surface of wrist smooth, anterior margin granulate and haired. Outer surface of palm marked with 5 longitudinal rows of granules, distal portions of these rows marked with large tubercles; outer surface marked with 4 longitudinal rows of granules. Fingers lightly pigmented with brown, prehensile margins armed with 4 or 5 teeth, proximal 1 or 2 large. Ambulatory legs rather slender, anterior edges of carpus and propodus spinulate and haired.

Measurements.—Length of carapace measured between the tips of the frontal teeth and the posterior margin 34 mm, width of same measured between the tips of the anterolateral teeth 47 mm.

Relationships.—This species is related to *Cancer nadaensis* Sakai (1969) in its general aspect, but the dorsal surface of the carapace is deeply areolated, differing from the smooth surface of *C. nadaensis*, and the last anterolateral tooth is less produced laterally.

Palicidae Rathbun, 1898

Palicus Philippi, 1838

Palicus bidentatus, new species

Fig. 3g-j

Material.—1 ♀, holotype (USNM 195065), SE of Hong Kong Island, 21°42'N, 114°50'E, 19 m, (38 fms), *Albatross* sta 5302, 9 Aug 1908.

Description.—This specimen is very old and fragmentary, the chelipeds and ambulatory legs have fallen off. Carapace broadly rectangular. Front not much produced anteriorly, composed of 4 teeth; upper orbital teeth also 4 in number, each separated by fissure. Upper surfaces of these teeth sparsely granulate, posterior to these teeth surface of anterior carapace transversely depressed. Around eyestalk, ventral ridge of orbit armed with 1 outer and 2 inner teeth; these teeth all strong and high compared with those of other species.

Hepatic border very short; branchial border armed with 2 obtuse densely granulate processes at lateral border. Posterolateral and posterior borders united, transverse, without teeth or spines.

Dorsal surface of carapace strongly uneven, sparingly covered with granules. Regions of carapace not clearly separated, but each with patches of thick granules. Gastric region with 3 rhomboidal patches of granules, cardiac region divided into 2 by median groove, intestinal region vaguely separated into 4. Between cardiac and intestinal regions, surface deeply and transversely depressed. Inner surfaces of the anterolateral and posterolateral borders each with patch of thick granules.

Chelipeds slender; arm, wrist, and palm not markedly granulate; prehensile edges entire, blade-like. Third ambulatory leg largest, second and first pairs little smaller, fourth pair very small and filiform. In first 3 ambulatory legs, merus thickened proximally, subdistal portion thin, distal outer part armed with strong tooth; carpus, propodus and dactylus with long hairs along anterior border.

Measurements.—Length of carapace 7.1 mm, width 10.5 mm.

Relationships.—Among the numerous species of *Palicus*, this species is peculiar in having the carapace transversely rectangular and its anterolateral border is armed with 2 obtuse processes, covered with granules. Around the orbit, this species has 3 dorsal, 1 lateral, 1 outer ventral, and 2 inner ventral teeth.

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